

# Vishwanath R. Iyer

**Assistant Professor**

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**Education/Training**

Bombay University, Mumbai, India	B.Sc. (1987), Chemistry & Biochemistry
M. S. University of Baroda, Baroda, India	M.Sc. (1989), Biotechnology
Harvard University, Cambridge MA	Ph.D. (1996), Genetics
Stanford University, Stanford CA	Post-doctoral (1996-2000), Genomics

**Research Experience**

- 9/00-5/03      Assistant professor, Section of Molecular Genetics and Microbiology, University of Texas, Austin TX
- Global transcriptional control in yeast
  - Gene expression programs during human cell proliferation
  - Genome-wide transcription factor targets in yeast and human
  - Collaborative microarray facility
- 5/96-8/00      Post-doctoral fellow      Stanford University, Stanford CA  
(Advisor: Dr. Patrick O. Brown)
- Yeast whole-genome ORF and intergenic microarrays
  - Human cDNA microarrays for expression profiling
- 9/89-4/96      Graduate student      Harvard University, Cambridge MA  
(Advisor: Dr. Kevin Struhl)
- Yeast transcriptional regulation

**Honours and Awards**

Government of India Biotechnology Fellowship (1987-1989)  
University Grants Commission Junior Research Fellowship (1989)  
Stanford University/NHGRI Genome Training Grant (1996)

**Invited Conference talks (selected)**

Invited Lecturer, NEC-Princeton Lectures in Biophysics  
Princeton, NJ (June 1998)  
Plenary Session Speaker, HGM '99 (HUGO Human Genome Meeting)  
Brisbane, Australia (April 1999)  
Invited Speaker, Gordon Research Conference "Human Molecular Genetics"  
Newport, RI (August 2001)

Invited Speaker, Nature Genetics "Oncogenomics 2002" Conference  
Dublin, Ireland (May 2002)  
Invited Speaker, "Pathology Bioinformatics" Symposium, University of Michigan,  
Ann Arbor, MI (November 2002)  
Invited Speaker, "Systems Biology: Genomic Approaches to Transcriptional  
Regulation" Cold Spring Harbor Laboratory Meeting (March 2003)  
Symposium co-Chair and Speaker "Functional Genomics" American Society for  
Biochemistry and Molecular Biology Meeting, San Diego, CA (April 2003)  
Invited Speaker in Functional Genomics (Gene Networks) Symposium, International  
Congress of Genetics, Melbourne Australia July 6-11 2003  
Invited Speaker "BioArrays Europe 2003"  
Cambridge, UK (Sep/Oct 2003)

### **Departmental Seminars**

Texas A&M University Genetics and Biochemistry & Biophysics Departments,  
October 24 2002  
New York University School of Medicine, Department of Biochemistry,  
November 20 2002  
UT Southwestern Medical Center, Human Genetics Seminar Series,  
May 5 2002  
UCLA School of Medicine, Department of Human Genetics  
June 2 2003  
National Human Genome Research Institute  
June 12 2003  
Sanger Institute of the Wellcome Trust, Hinxton, UK  
Sep 2003

### **Other Professional Activities**

Reviewer for *Genome Biology*, *Genome Research*, *Nature Genetics*, *Science* (1998-  
2003)  
Instructor, Cold Spring Harbor Summer Course "Making and using DNA Microarrays"  
(2000 - 2003)  
Member, NIDDK Special Emphasis Review Panel ZDK1 (2001-2002)

### **Publications**

1. Iyer V. & Struhl, K. (1995) Poly(dA:dT), a ubiquitous promoter element that stimulates transcription via its intrinsic DNA structure, *EMBO J.* 14: 2570-2579.
2. Iyer V. & Struhl, K. (1995) Mechanism of differential utilization of the his3 TR and TC TATA elements, *Mol. Cell. Biol.* 15: 7059-7066.
3. Iyer V. & Struhl K. (1996) Absolute mRNA levels and transcription initiation rates in *Saccharomyces cerevisiae*. *Proc. Natl. Acad. Sci. (USA)* 93:5208-5212.

4. DeRisi J. L., Iyer V. R. & Brown P. O. (1997) Exploring the metabolic and genetic control of gene expression on a genomic scale. *Science* 278:680-686
5. Marton M. J., DeRisi J. L., Bennett H. A., Iyer V. R., Meyer M. R., Roberts C. J., Stoughton R., Burchard J., Slade D., Dai H., Bassett D. E. Jr., Hartwell L. H., Brown P. O. & Friend S. H. (1998) Drug target validation and identification of secondary drug target effects using DNA microarrays. *Nature Med.* 4:1293-1301
6. Lutfiyya L. L., Iyer V. R., DeRisi J., DeVit M. J., Brown P. O. & Johnston M. (1998) Characterization of three related glucose repressors and genes they regulate in *Saccharomyces cerevisiae*. *Genetics* 150:1377-1391
7. Spellman P. T., Sherlock G., Zhang M. Q., Iyer V. R., Anders K., Eisen M. B., Brown P. O., Botstein D. & Futcher B. (1998) Comprehensive identification of cell cycle-regulated genes of the yeast *Saccharomyces cerevisiae* by microarray hybridization. *Mol. Biol. Cell* 9:3273-3297
8. Iyer V. R., Eisen M. B., Ross D. T., Schuler G., Moore T., Lee J. C. F., Trent J. M., Staudt L. M., Hudson Jr. J., Boguski M. S., Lashkari D., Shalon D., Botstein D. & Brown P. O. (1999) The transcriptional program in the response of human fibroblasts to serum. *Science* 283:83-87
9. DeRisi J. L. & Iyer V. R. (1999) Genomics and array technology. *Curr. Opin. Oncol.* 11:76-79
10. Ross D. T., Scherf U., Eisen M. B., Perou C. M., Spellman P., Iyer V. R., Rees C., Jeffrey S. S., Van de Rijn M., Waltham M., Pergamenschikov A., Lee J. C. F., Lashkari D., Shalon D., Myers T. G., Weinstein J. N., Botstein D., & Brown P. O. (2000) Systematic variation in gene expression patterns in human cancer cell lines. *Nature Genetics* 24: 227-235
11. Sudarsanam P., Iyer V. R., Brown P. O. & Winston F. (2000) Whole-genome expression analysis of *snf/swi* mutants of *S. cerevisiae*. *Proc. Natl. Acad. Sci. (USA)* 97: 3364-3369
12. Tran H. G., Steger D. J., Iyer V. R., & Johnson A. D. (2000) The chromo domain protein Chd1p from budding yeast is an ATP-dependent chromatin-modifying factor *EMBO J* 19: 2323-2331
13. Gross C., Kelleher M., Iyer V. R., Brown P. O., & Winge D. R.. (2000) Identification of the copper regulon in *Saccharomyces cerevisiae* by DNA microarrays. *J. Biol. Chem.* 275: 32310-32316
14. Reid J. L., Iyer V. R., Brown P. O. & Struhl K. (2000) Coordinate regulation of yeast ribosomal protein genes is associated with targeted recruitment of Esa1 histone acetylase. *Mol. Cell* 6: 1297-1307

15. Iyer V. R., Horak C., Scafe C. S., Botstein D., Snyder M. & Brown P. O. (2001) Genomic binding sites of the yeast cell-cycle transcription factors SBF and MBF *Nature* 409: 533-538
16. Miki R., Kadota K., Bono H., Mizuno Y., Tomaru Y., Carninci P., Itoh M., Shibata K., Kawai J., Konno H., Watanabe S., Sato K., Tokusumi Y., Kikuchi N., Ishii Y., Hamaguchi Y., Nishizuka I., Goto H., Nitanda H., Satomi S., Yoshiki A., Kusakabe M., DeRisi J.L., Eisen M.B., Iyer V.R., Brown P.O., Muramatsu M., Shimada H., Okazaki Y. & Hayashizaki Y. (2001) Delineating developmental and metabolic pathways in vivo by expression profiling using the RIKEN set of 18,816 full-length enriched mouse cDNA arrays *Proc. Natl. Acad. Sci. (USA)* 98: 2199-2204
17. Pollack J. R. & Iyer V.R. (2002) Characterizing the physical genome. *Nature Genetics* 32 suppl: 515-521
18. Iyer V. R. Microarray-based detection of DNA protein interactions: Chromatin Immunoprecipitation on Microarrays, in *DNA Microarrays: A Molecular Cloning Manual* (eds. Bowtell, D. & Sambrook, J.) 453-463 (Cold Spring Harbor Laboratory Press, 2003).  
\*(not peer reviewed)
19. Killion, P., Sherlock G. and Iyer V. R. (2003) The Longhorn Array Database, an open-source implementation of the Stanford Microarray Database *BMC Bioinformatics* 4: 32
20. Hahn J. S., Hu Z., Thiele D. J. & Iyer V. R. Genome-Wide Analysis of the Biology of Stress Responses Through Heat Shock Transcription Factor (submitted to *PNAS*)
21. Kim J. & Iyer V.R. The global role of TBP recruitment to promoters in mediating gene expression profiles (manuscript in preparation)

### Current/Pending Research Support

U01 AA13518-01 Adron Harris (PI) 25% effort

9/28/01 - 9/27/06

NIH/NIAAA

"INLA: Microarray Core"

This proposal was a response to the Integrative Neuroscience Initiative on Alcoholism (INIA) RFA-AA-01-002. The overall goal is to support the use of microarray technology to define changes in gene expression that either predict or accompany excessive alcohol consumption.

Role: Co-investigator

003658-0223-2001 Iyer (PI) 16% effort

01/01/02 - 08/31/04

Texas Higher Education Coordinating Board (ARP)

"Microarray based global mapping of DNA-protein interactions at promoters in human cells"

This is a pilot project to map the in vivo interactions of transcription factors with human promoters

Role: PI

Information Technology Research 0325116 R. Mooney (PI) 9% effort

09/01/03 - 08/31/07

NSF

"Feedback from Multi-Source Data Mining to Experimentation for Gene Network Discovery"

Role: Co-investigator

1 R01 CA95548-01A2 (pending) Iyer (PI) 25% effort

12/1/03 - 11/30/08

NIH

"Analysis of genome-wide transcriptional control in yeast"

This is a project to identify stress responsive transcription factor targets in yeast through the use of DNA microarrays

Role: PI

Breast Cancer Idea Award (pending) Iyer (PI) 10% effort

1/1/04 - 12/31/06

US Army Medical Research and Materiel Command

"Genome-wide chromosomal targets of oncogenic transcription factors"

This is a project aimed at identifying direct chromosomal targets of c-myc and ER in human cells through the use of a novel sequence tag analysis method.

Role: PI

003658-0531-2003 (pending) Marcotte (PI) 8% effort

01/01/04 - 12/31/05

Texas Higher Education Coordinating Board (ATP)

"Cell arrays: A novel high-throughput platform for measuring gene function on a genomic scale"

This proposal is aimed at developing a novel microarray based platform for automated, high-throughput microscopic imaging of cells, allowing rapid and systematic evaluation of gene function.